

# LIQUID CRYSTAL DISPLAYS USING ORGANIC INSULATING MATERIAL AND MANUFACTURING METHODS THEREOF

## ABSTRACT OF THE DISCLOSURE

5           A passivation layer is formed by coating a flowable insulating material  
on the substrate where a thin film transistor and a storage capacitor electrode,  
and a pixel electrode is formed on the passivation layer. A portion of the  
passivation layer is etched using the pixel electrode as a mask to make a  
groove on the thin film transistor, and then a black matrix is formed by filling an  
10   organic black photoresist in the groove. To increase the storage capacitance, a  
portion of the passivation layer is removed or to form a metal pattern on the  
storage capacitor electrode. A flowable insulating material is used as a gate  
insulating layer to planarize the substrate. In the case of the etch stopper type  
thin film transistor, a photo definable material is used as the etch stopper layer  
15   to reduce the parasitic capacitance between the gate electrode and the drain  
electrode.